

7

Of course, any other appropriate range of frequencies could be used. After application of the designated frequency is detected, the output of the air coil is the rectified and measured by the controller. If the controller detects a significant “dip” in the voltage, a tag is known to be present. This detection method is sometimes referred to as a “grid dip” oscillator.

Associated with the controller 24 is a counter 48 which is reset each time a new refill container is detected. In other words, each time a new container is inserted into the dispenser housing a count value is set at the counter 48 to a predetermined value such as zero. Next, after a refill container is validated, the counter allows the certain number of dispense events to occur by either counting up to a predetermined value or counting down to zero without requiring detection of a new identifier. After validation, the controller then deactivates the RFID identifier 36' by utilizing a frequency sweep to determine the exact resonant frequency of the tag and then transmitting the frequency at a high power level. This degrades the dielectric material in the identifier 36' and shifts its resonant frequency out of the detection band. In other words, the identifier 36' is deactivated so that it is no longer detectable. Next, the controller then begins counting up or down the number of uses of the dispenser as they occur which can be associated with the amount of material in the fluid container 14. When the count reaches the predetermined value or zero, then the actuating mechanism is rendered inoperative and this serves as an indication that the refill container must be replaced. Some type of notice by the indicator 27 and/or the wireless communication device 28 may convey the operational status of the dispenser.

To clearly set out operation of the dispenser 10, reference is made to FIG. 3, which shows a method of operation designated generally by the numeral 100. At step 102, the container 14 is installed into the dispenser housing 12 and the cover 13 is closed. At step 104 the controller 24 energizes the detection device 44' at the appropriate frequency and transmits a return output signal back to the controller 24 for evaluation. Then the controller determines whether the identifier 36' is present and valid. If the identifier 36' is not present, or if the identifier 36' is present, but not valid, then at step 106 the actuating mechanism 20 is disabled by the controller 24 or otherwise so as to prevent dispensing of any material from the container. Alternatively at step 106, the controller 24 can signal the indicator 26 and/or enable the wireless communication device 27 to display or send an indication or status to the user or maintenance staff that the count value has been reached and that the container is ready for replacement. It will be appreciated that both disablement of the mechanism and sending of a notice can take place simultaneously. In any event, if the identifier 36' is present and valid at step 104, then at step 108 the controller 24 sets a count value in the counter 48, wherein the count value is the number of dispense cycles associated with the material carried by the container. At about the same time the count value is set, the controller 24 deactivates the detection device as described previously.

At step 110, the dispenser undergoes a dispense cycle upon action by the user and at step 112 the controller 24 adjusts the count value accordingly. Finally, at step 114 the controller 24 determines whether the count value has been reached or not. If the predetermined count value has not been reached, then the method returns to step 110. However, if the count value has been reached at step 114, then the actuating mechanism 20 is disabled and/or notice is sent as set out in step 106.

This embodiment is advantageous in that an identifier or tag can be deactivated to prevent refilling of the enclosure with non-approved material. The method of implementation of this embodiment is relatively inexpensive as there are no

8

modifications to existing refill containers and no motion detection of the pump mechanism is required.

Thus, it can be seen that the objects of the invention have been satisfied by the structure and its method for use presented above. While in accordance with the Patent Statutes, only the best mode and preferred embodiment has been presented and described in detail, it is to be understood that the invention is not limited thereto or thereby. Accordingly, for an appreciation of the true scope and breadth of the invention, reference should be made to the following claims.

The invention claimed is:

1. A refill container for receipt in a dispensing system, the container comprising:

- an enclosure for carrying dispensable material;
- a pump mechanism coupled to said enclosure and movable from a first position to a second position and back to said first position; and
- a keying identifier carried by a movable portion of said pump mechanism and associated with the dispensable material, said movable portion is movable between said first and second positions so that said keying identifier provides a clear indication of a proper refill container.

2. The refill container according to claim 1, wherein said pump mechanism comprises:

- a collar secured to said enclosure;
- a plunger receivable in said collar; and
- a nozzle movable with said plunger, such that the dispensable material moves through said nozzle as said plunger moves from said first position to said second position.

3. The refill container according to claim 1, wherein said pump mechanism includes a plunger that is spring-biased to said first position.

4. The refill container according to claim 3, wherein said keying identifier comprises a medium adapted to be observed by a detection device.

5. The refill container according to claim 3, wherein said keying identifier comprises a ferrite material maintained in a fixed position on said plunger.

6. The refill container according to claim 3, wherein said keying identifier comprises at least one ferrite bead disposed about and secured to said plunger.

7. The refill container according to claim 3, wherein said keying identifier comprises a wire coil having a parallel connected capacitor.

8. A dispensing system, comprising:

- a housing;
- a refill container carrying a dispensable material and received in said housing;
- a pump mechanism coupled to said refill container and movable from a first position to a second position and back to said first position;
- an identifier carried by either said refill container or said pump mechanism; and
- a detection device carried by said housing, said detection device detecting movement of said identifier and allowing operation of said pump mechanism based on movement of said identifier.

9. The dispensing system according to claim 8, wherein said identifier is movable between said first position and said second position.

10. The dispensing system according to claim 9, further comprising:

- a controller connected to said detecting device, said controller blocking movement of said pump mechanism if said detection device does not detect expected movement of said identifier.